Ocean Prediction Center
Offshore Waters Forecast Zone Change Proposal

(Submitted 25 Sept 2013)

I. Introduction

The Ocean Prediction Center (OPC) of the National Centers for Environmental Prediction (NCEP) produces the offshore waters forecasts for both the Atlantic Ocean (OFFNT1, OFFNT2) and the Pacific Ocean (OFFPZ5, OFFPZ6). Currently, OPC provides forecasts for 8 zones in the Atlantic and 5 zones in the Pacific (Figure 1 and Figure 2). User feedback over the years has focused on the fact that the forecast zones are too large to provide detailed forecasts for their needs and also that the forecast zones are not always aligned with the various user areas of responsibilities or key bathymetric features. The proposed forecast zones address many of our users' concerns and are designed to meet their needs for clear, concise forecasts that are aligned with other NWS boundaries.

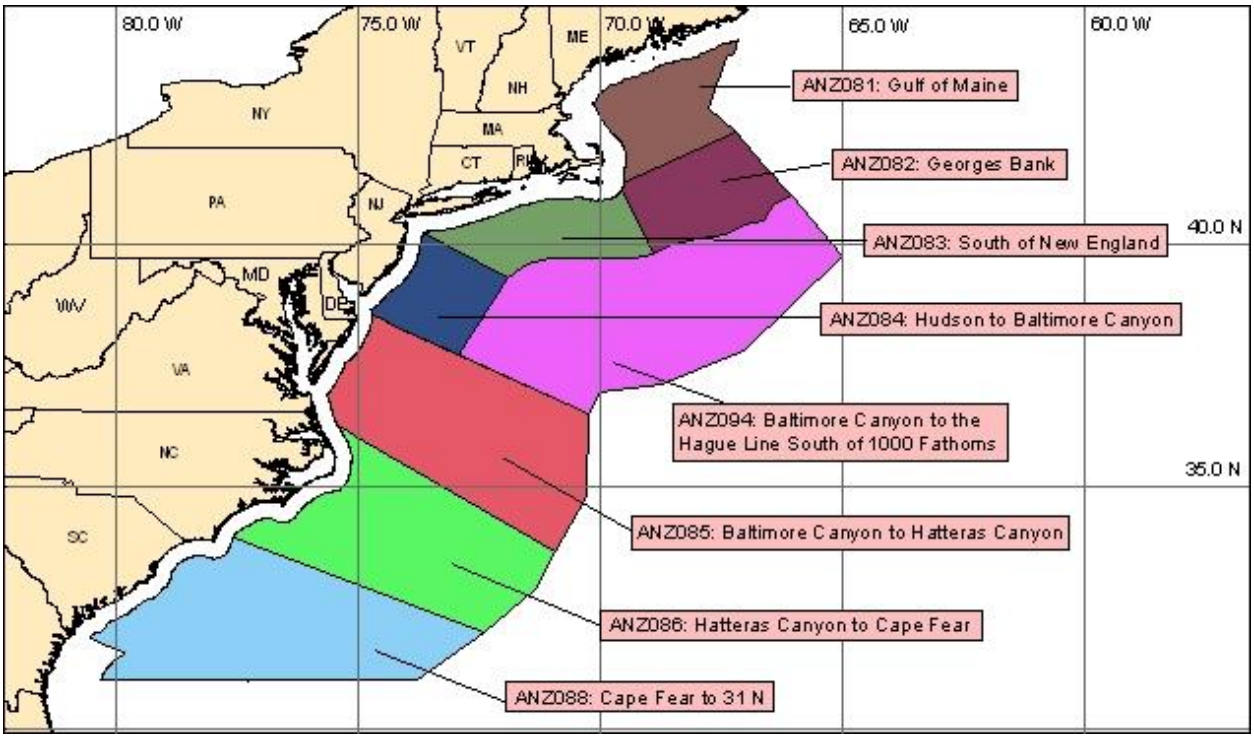

Figure 1. Existing Atlantic offshore waters zone configuration. Current configuration consists of eight (8) zones for the Atlantic offshore waters.

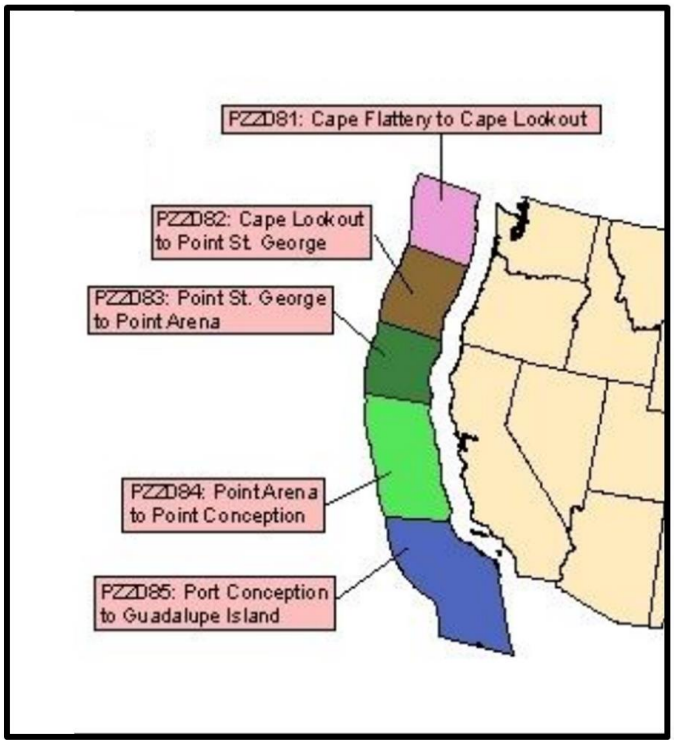

Figure 2. Existing Pacific offshore waters zone configuration. Current configuration consists of five (5) zones for the Pacific offshore waters.

The current large forecast zones in the OPC offshore waters area can result in the appearance of over-warning of areas. When a marine or tropical cyclone warning is issued for any portion of the current large offshore waters zones, the entire zone is highlighted in the Watch Warning Advisory (WWA) map on the National Weather Service (NWS) website, www.weather.gov . This has resulted in confusion on the part of our users as well as local NWS forecast offices. This issue was brought up at the December 2010 NOAA National Hurricane conference as Agenda Item 10-15. The much smaller new zones offers a solution to this by providing more specific areal delineation of warnings and less confusion for the user community and the NWS forecast offices.

II. The development of gridded marine forecasts and smaller marine zones

On May 1, 2013 OPC started using the Graphical Forecast Editor (GFE) to help produce offshore marine forecasts based on a gridded database. The gridded database is produced using the Advanced Weather Interactive Processing System's (AWIPS II) GFE. The gridded database consists of numerical weather prediction (NWP) model fields from one or several forecast models that are massaged by the forecasters, taking into account forecaster expertise. The forecasters can blend models or select from a single preferred model to populate the fields. They can also edit the grid directly based on their experience with model performance. The forecaster edits the gridded fields to provide a value added gridded marine database on a 5 km horizontal resolution. Winds, wind gusts, hazards and significant wave height grids are produced at a 3 hour time step through the 5 day period of the forecast. The utility of the gridded marine database lies

in the capability to derive products from this database through the use of text formatters, including redesigned NAVTEX and high-frequency (HF) voice-broadcasts (VOBRA). Additional details on these products will be addressed in the communications section. The gridded data is also composited from multiple offices and hosted on a website at preview.weather.gov/graphical with the gridded data becoming an increasingly important product since it gives a detailed forecast that goes beyond what can be contained in a text product.

The text formatters in AWIPS GFE allow for the creation of much smaller zones which provide detailed forecasts for each zone, thus eliminating excessive wording necessary to describe conditions in larger zones.

III. Current Zone numbers for the Offshore Waters Zones

Figure 1 and Figure 2 depict the current offshore waters zone configuration for OPC for the Atlantic (OFFNT1, OFFNT2) and the Pacific (OFFPZ5, OFFPZ6) offshore waters area of responsibility. The current Universal Geographical Code (UGC) zone numbers and geographical descriptions for the OPC offshore waters are listed below.

Atlantic Ocean- NT1 waters

ANZ080 - Synopsis for New England Waters.
ANZ081 - Gulf of Maine to the Hague Line.
ANZ082 - Georges Bank from the Northeast Channel to the Great South Channel including the waters east of Cape Cod to the Hague Line.
ANZ083 - South of New England from the Great South Channel to Hudson Canyon including the waters south of Martha's Vineyard and Nantucket Island out to 1000 fathoms.

Atlantic Ocean- NT2 waters

ANZ089 - Synopsis for Mid Atlantic Waters.
ANZ084 - Hudson to Baltimore Canyon.
ANZ085 - Baltimore Canyon to Hatteras Canyon out to 36N 70W to 34N 71W.
ANZ086 - Hatteras Canyon to Cape Fear out to 34N 71W to 32N 73W.
ANZ088 - Cape Fear to 31N out to 32N 73W to 31N 74W.
ANZ094 - Baltimore Canyon to the Hague Line South of 1000 Fathoms.

Pacific Ocean- PZ5 waters

PZZ080 - Synopsis for Washington and Oregon Waters.
PZZ081 - Cape Flattery to Cape Lookout.
PZZ082 - Cape Lookout to Point St. George.

Pacific Ocean- PZ6 waters

PZZ089 - Synopsis for California Waters Offshore.
PZZ083 - Point St. George to Point Arena.
PZZ084 - Point Arena to Point Conception.
PZZ085 - Point Conception to Guadalupe Island.

IV. Rationale for the proposed offshore waters zone configuration

The text formatter in GFE works best with smaller zones which are based on local climate regimes that are more or less homogenous. The proposed zone configurations were designed with this in mind. A key consideration for the layout of the proposed zones is the climatology of 10 m Quikscat winds. Local climatology and bathymetry were other factors considered as well. An "inner" marine zone was added wherever practical in order to help local weather forecast offices (WFO) maintain an effective NOAA Weather Radio program as well as to provide more specific information to mariners near the coast. The position of the Gulf Stream was taken into account for the Atlantic zones. The zone configurations were adjusted where possible to coincide with existing marine boundaries from coastal WFOs. Input from coastal offices was taken into account to define the boundaries. Customer feedback for the changes has been positive since users have expressed the concern that the offshore forecasts cover such a large area that they often times are not specific enough for their needs.

The zone names reflect well-known geographical entities covered in the zone area whenever possible (e.g. "Gulf of Maine"). In the absence of a convenient geographical reference, the zone name includes a well-known bathymetric feature whenever possible (e.g. "1000 fathoms"). In some instances, boundaries were described by latitude and/or longitude description.

Finally, all of the proposed zone numbers have new Universal Geographical Codes (UGC) which do not re-use any of the current zone numbers.

V. Proposed new Zone numbers for the Offshore Waters Zones

Figures 3 and 4 depict the proposed offshore waters zone configuration for OPC's Atlantic (OFFNT1, OFFNT2) and Pacific (OFFPZ5, OFFPZ6) offshore waters area of responsibility. The proposed Universal Geographical Code (UGC) zone numbers and geographical descriptions for the OPC offshore waters are listed below.

OPC Atlantic Offshore Waters

ANZ898 - Synopsis for New England waters.
ANZ899 - Synopsis for Mid Atlantic waters.
ANZ800 - Gulf of Maine to the Hague Line.
ANZ805 - Georges Bank between Cape Cod and 68W north of 1000 fathoms.
ANZ810 - South of New England between the Great South Channel and Montauk Point to 1000 fathoms.
ANZ815 - South of Long Island between Montauk Point and Sandy Hook to 1000 fathoms.
ANZ820 - Hudson Canyon to Baltimore Canyon to 1000 fathoms.

ANZ825 - Baltimore Canyon to Hatteras Canyon to 100 NM offshore.
ANZ828 - Cape Charles Light to Currituck Beach Light to 100 NM offshore.
ANZ830 - Currituck Beach Light to Cape Hatteras to 100 NM offshore.
ANZ833 - Cape Hatteras to Cape Fear to 100 NM offshore.
ANZ835 - Cape Fear to 31N to 1000 FM.
ANZ900 - Georges Bank between 68W and the Hague Line.
ANZ905 - East of 69W to the Hague Line between 1000 fathoms and 39N.
ANZ910 - East of 69W and south of 39N to 250 NM offshore.
ANZ915 - Between 1000 fathoms and 39N west of 69W.
ANZ920 - Baltimore Canyon to 69W east of 1000 fathoms and south of 38.5N to 250 NM offshore.
ANZ925 - Baltimore Canyon to Hatteras Canyon between 100 NM and 250 NM offshore.
ANZ930 - Hatteras Canyon to Cape Fear 100 NM and 250 NM offshore.
ANZ935 - Cape Fear to 31N east of 1000 fathoms to 250 NM offshore.

OPC Pacific Offshore Waters

PZZ898 - Synopsis for Washington and Oregon waters.
PZZ899 - Synopsis for California waters.
PZZ800 - Cape Flattery to Cape Shoalwater between 60 NM and 150 NM offshore.
PZZ805 - Cape Shoalwater to Cape Lookout between 60 NM and 150 NM offshore.
PZZ810 - Cape Lookout to Florence, OR between 60 NM and 150 NM offshore.
PZZ815 - Florence, OR to Point St. George between 60 NM and 150 NM offshore.
PZZ820 - Point St. George to Point Arena between 60 NM and 150 NM offshore.
PZZ825 - Point Arena to Pigeon Point between 60 NM and 150 NM offshore.
PZZ830 - Pigeon Point to Point Piedras Blancas between 60 NM and 150 NM offshore.
PZZ835 - Point Piedras Blancas to Santa Cruz Island, CA between 60 NM and 150 NM offshore.
PZZ840 - Santa Cruz Island, CA to San Clemente Island, CA between 60 NM and 150 NM offshore.
PZZ900 - Cape Flattery to Cape Shoalwater between 150 NM and 250 NM offshore.
PZZ905 - Cape Shoalwater to Cape Lookout between 150 NM and 250 NM offshore.
PZZ910 - Cape Lookout to Florence, OR between 150 NM and 250 NM offshore.
PZZ915 - Florence, OR to Point St. George between 150 NM and 250 NM offshore.
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PZZ940 - Santa Cruz Island, CA to 120W between 150 NM and 250 NM offshore.
PZZ945 - 120W to San Clemente Island, CA between 150 NM and 250 NM offshore.

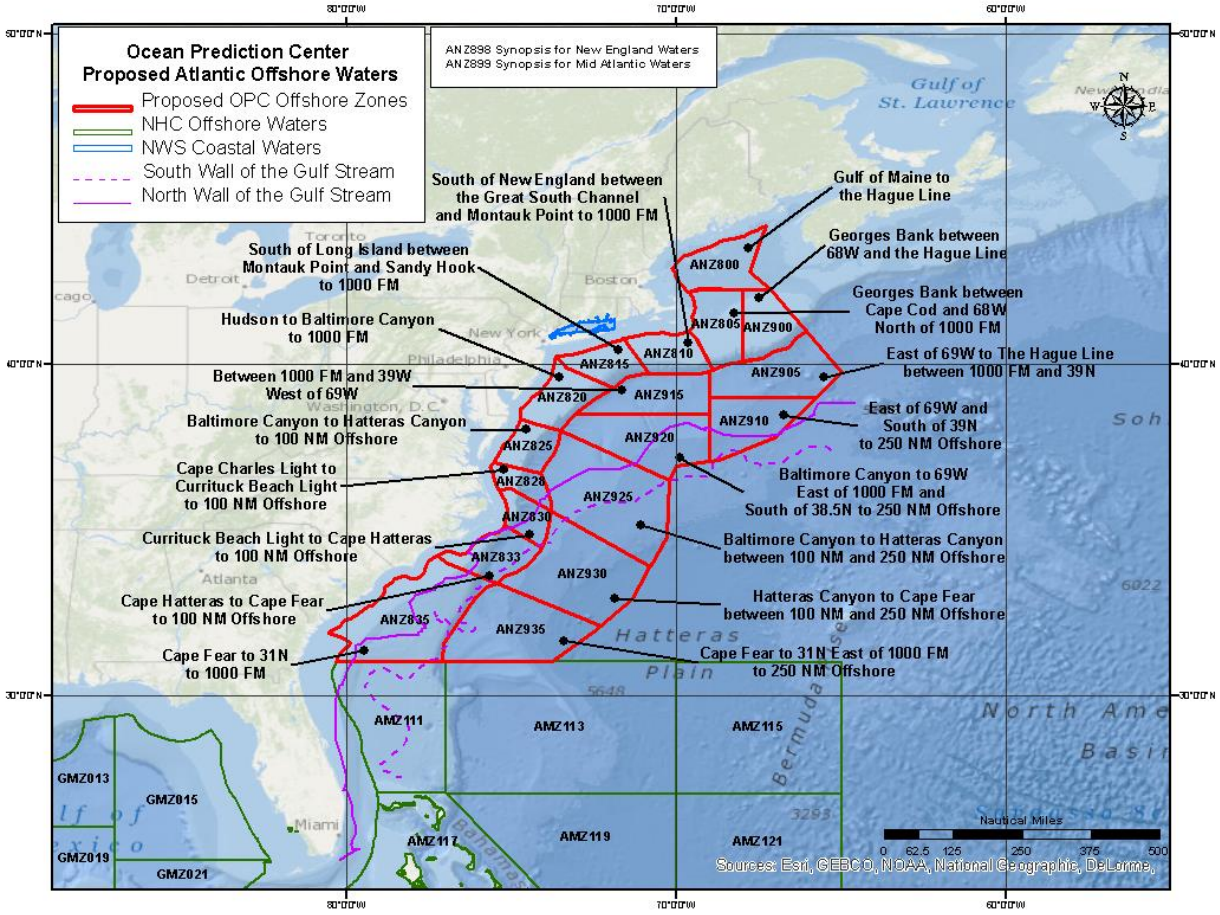

Figure 3. Proposed OPC Atlantic offshore waters zone configuration. Eighteen zones (18) cover the OPC Atlantic offshore waters.

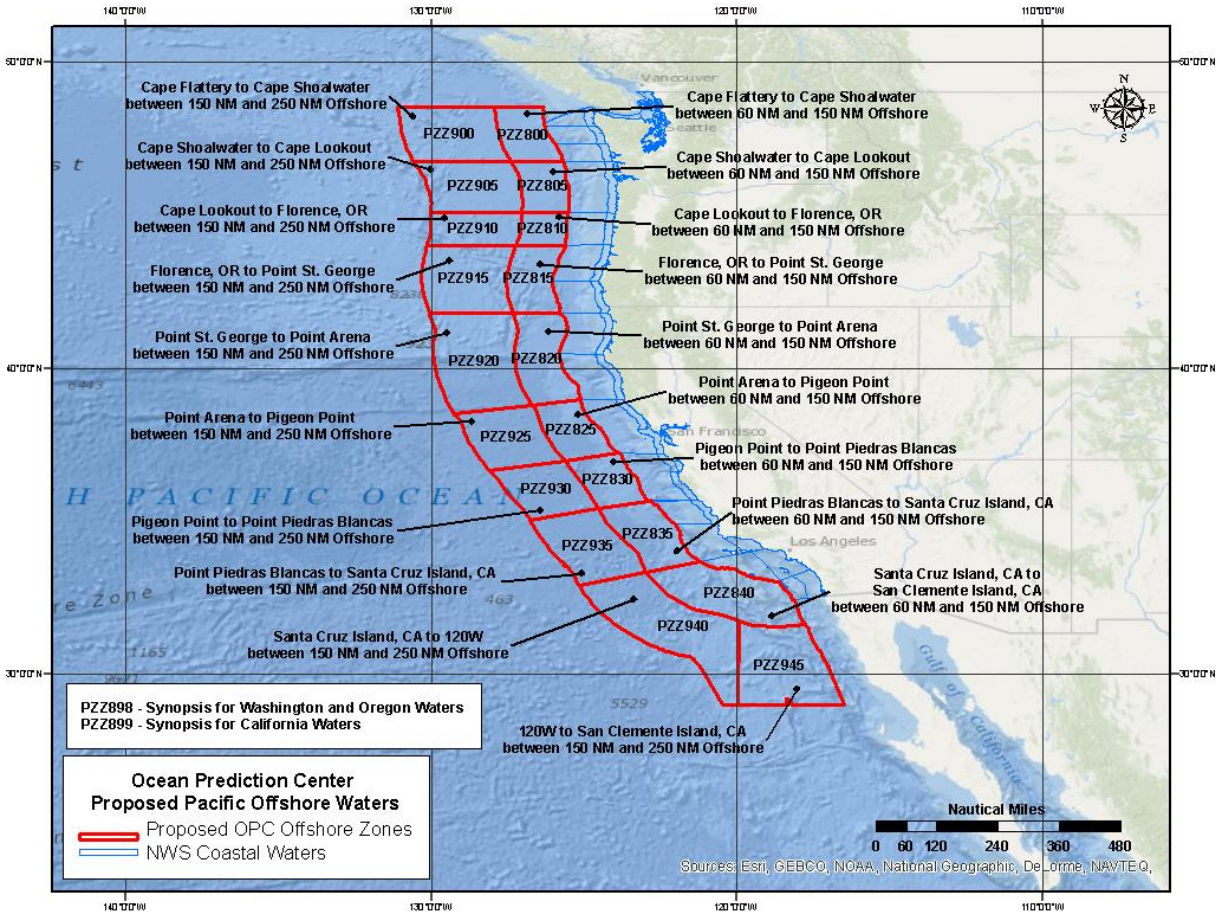

Figure 4. Proposed OPC Pacific offshore waters zone configuration. Nineteen zones (19) cover the OPC Pacific offshore waters.

Appendices A and B provide samples of the offshore forecasts for the Atlantic and Pacific with the new zone configuration.

VI. Dissemination and operational backup

NAVTEX

The GFE text formatters produce a NAVTEX product which derives the pertinent marine information from the gridded forecast database. The GFE NAVTEX text products are similar to the current NAVTEX products, but both versions sometimes exceed the 89 line limit set forth in the NWS marine directives. The NAVTEX products produced by the GFE text formatters are an improvement over the existing NAVTEX products since GFE incorporates coastal marine warnings and describes marine weather conditions within the mandated 250 nm area of the transmitter site. These features were the original requirements of the NAVTEX products, but the current NAVTEX format does not adhere to them.

In order to optimize the GFE text formatter software, slight changes to the NAVEX coverage areas are needed. **Figure 5 and Figure 6** are a depiction of the proposed shape file that GFE will use to generate NAVTEX forecasts within OPC's offshore areas of responsibility. **Appendix C** provides a sample of a NAVTEX product for OFFN01.

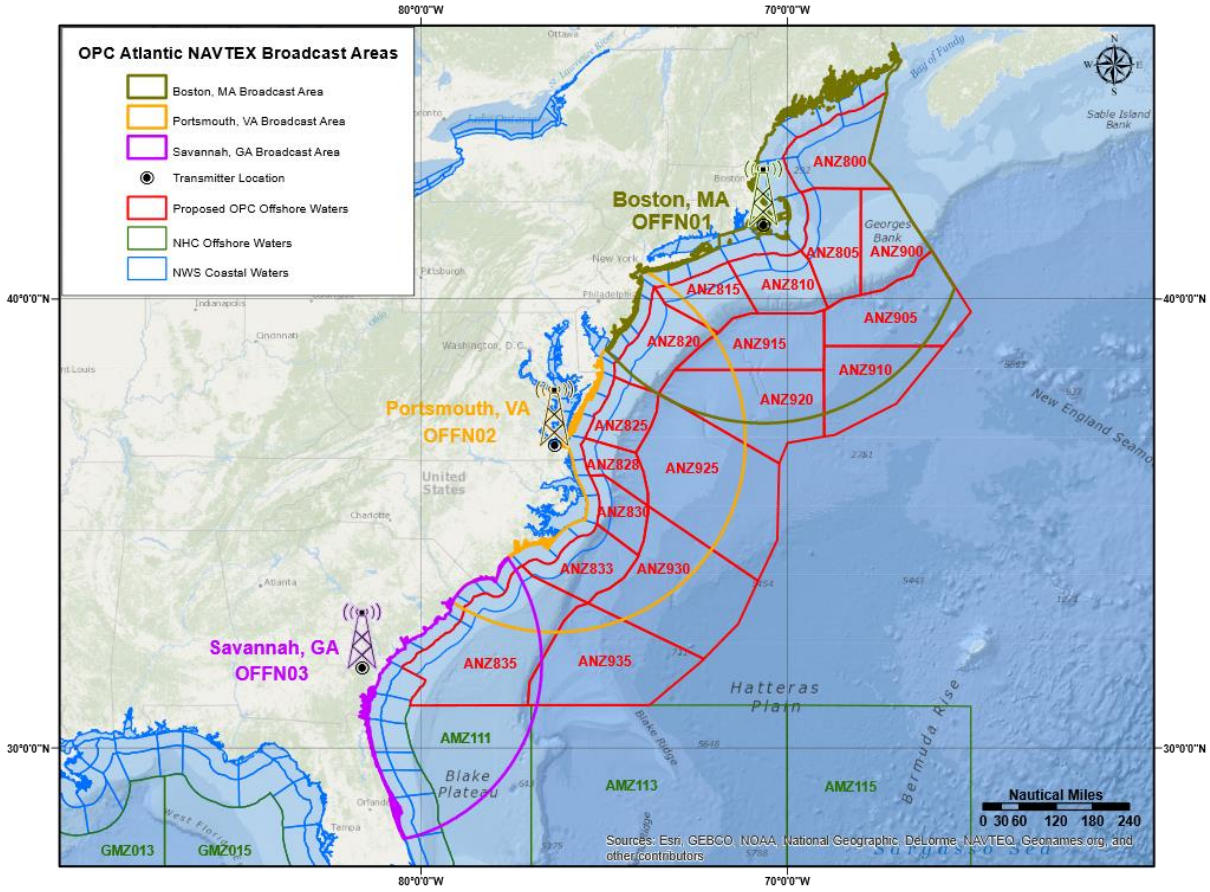

Figure 5. Proposed shape files for the Atlantic NAVTEX coverage area for the GFE text formatters. The three NAVTEX transmitters in OPC's Atlantic Area of Responsibility (AOR) are Boston MA, Portsmouth VA, and Savannah GA. They broadcast the OFFN01, OFFN02, and OFFN03 NAVTEX products.

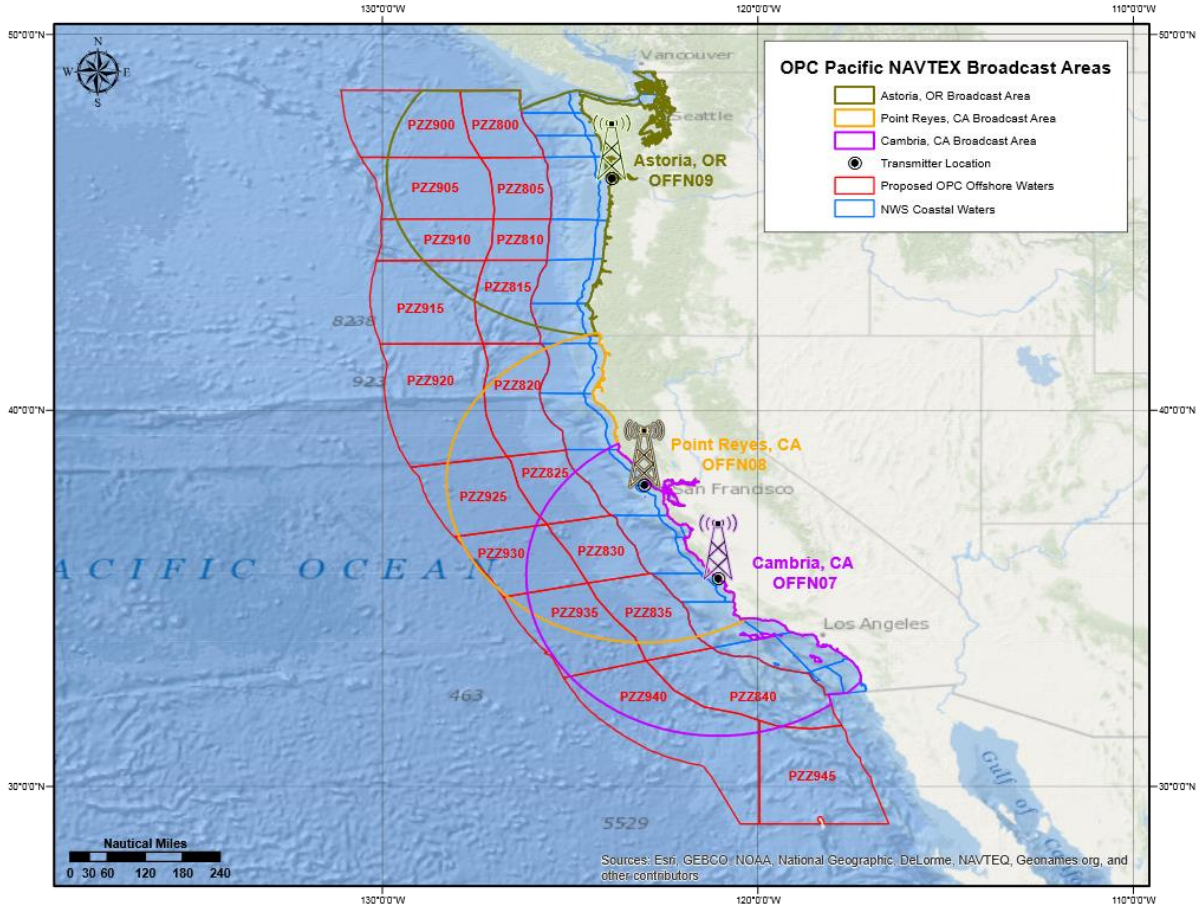

Figure 6. Proposed shape files for the Pacific NAVTEX coverage area for the GFE text formatters. The three NAVTEX transmitters in OPC's Pacific AOR are Astoria OR, Point Reyes CA and Cambria CA. They broadcast the OFFN09, OFFN08 and OFFN07 NAVTEX products.

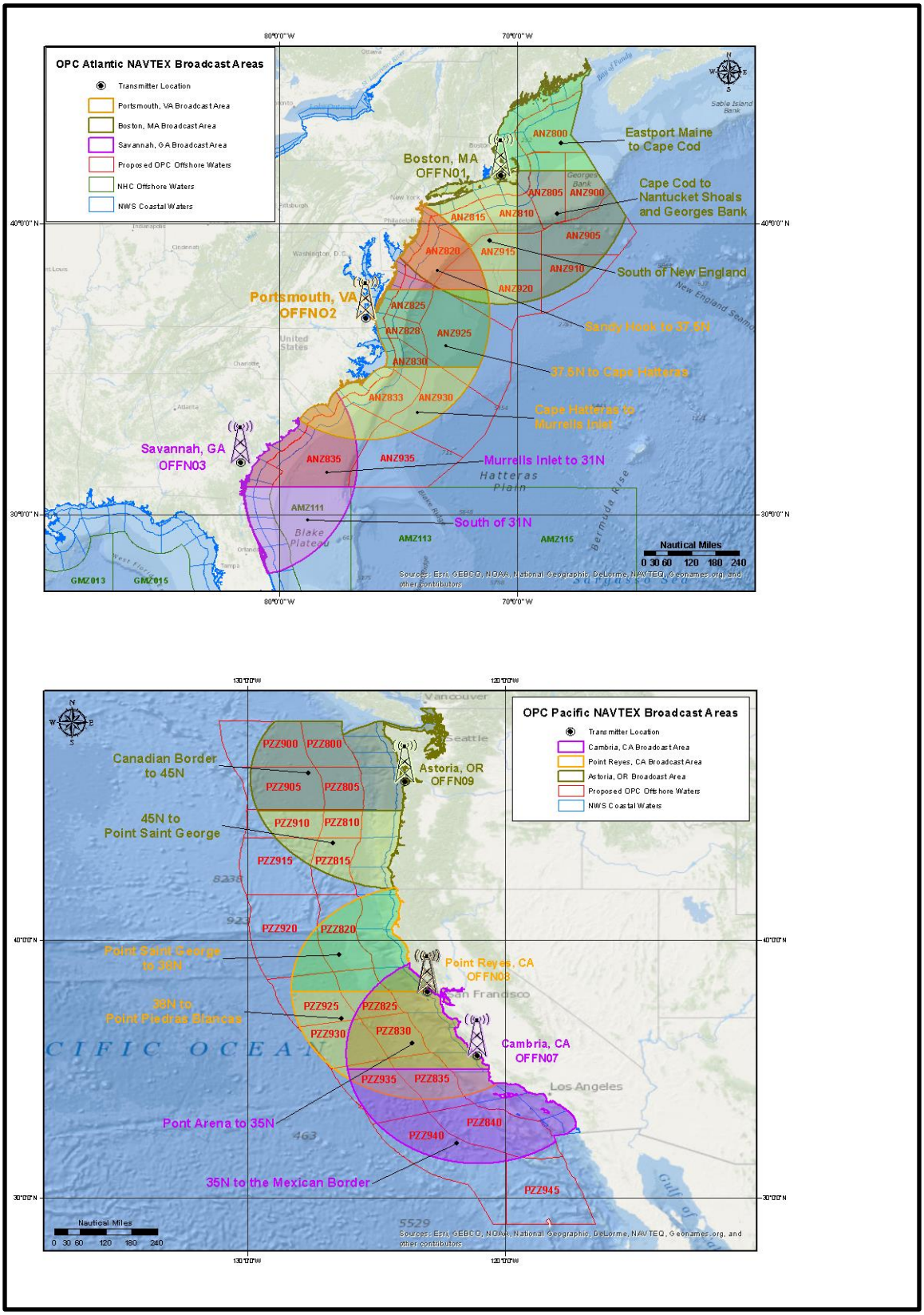

Figure 7. Proposed shape files for the NAVTEX GFE formatter coverage areas. Top panel is for the Atlantic and bottom panel for the Pacific.

NAVTEX GFE formatter coverage areas

Figure 7 shows the NAVTEX formatter coverage areas for the Atlantic and Pacific. The shading in the figure indicates subdivisions within the transmitter area for separate forecasts and forecast area descriptions.

Current Atlantic NAVTEX Forecast area descriptions are the following:

N01: Eastport Maine to Cape Cod…east to the Hague line
Cape Cod to Nantucket Shoals and Georges Bank…east to the Hague Line
South of New England…out to 1000 FMS
N02: Sandy Hook to Fenwick Island…out to 250 NM
Fenwick Island to Cape Hatteras…out to 250 NM
Cape Hatteras to Murrells Inlet…out to 250 NMM
N03: Murrells Inlet to 31N…out 250 NM
South of 31N…out to 65W

Proposed Atlantic NAVTEX Forecast area descriptions are the following:

N01: Eastport Maine to Cape Cod…east to the Hague line
Cape Cod to Nantucket Shoals and Georges Bank east of 70W…to the Hague Line
South of New England…to 70W
N02: Sandy Hook to 37.5N…out to 250 NM
37.5N to Cape Hatteras…out to 250 NM
Cape Hatteras to Murrells Inlet…out to 250 NM
N03: Murrells Inlet to 31N…out 250 NM
South of 31N…out to 1000 FMS

Current Pacific NAVTEX Forecast area descriptions are the following:

N09: Canadian Border to Cape Lookout
Cape Lookout to Point Saint George
N08: Point Saint George Point Arena
Point Arena to Point Piedras Blancas…out to 250 NM
N07: Point Piedras Blancas to Point Conception
Point Conception to the Mexico Border

Proposed Pacific NAVTEX Forecast area descriptions are the following:

N09: Canadian Border to 45N…out to 250 NM
45N to Point Saint George…out to 250 NM
N08: Point Saint George to 38N…out to 250 NM
38N to Point Piedras Blancas…out to 250 NM
N07: Point Arena to 35N…out to 250 NM
35N to the Mexico Border…out to 250 NM

High-frequency (HF) voice broadcasts for the USCGS (VOBRA)

The United States Coast Guard (USCG) provides a high frequency voice broadcast (VOBRA) of the OPC offshore waters forecasts.

For the Atlantic, the broadcast is transmitted simultaneously from Chesapeake, VA (NMN) and New Orleans, LA (NMG), and consists of HF transmissions at 6, 8, and 12 MHz. The current USCG schedule allows 90 minutes for the broadcast of all offshore forecasts, in addition to all active TCMAT1-5 products, and the TWOAT. These are read by a voice synthesizer ("Iron Mike") at 0330Z, 0930Z, 1530Z, and 2130Z. The current USCG Voice Broadcast (VOBRA) repeats the OFFNT1 and OFFNT2 verbatim.

The proposed solution for the VOBRA is the same approach used by TAFB when they converted to new zones in April 2012. This approach is to combine the proposed new offshore marine zones in a manner similar to the current zone configuration. Figures 8 and 9 show the current and proposed VOBRA zone groupings. This solution would limit the broadcast cycle to the current time since it would preserve the same number of zone combinations and also retain the spatial coverage of the full OFFNT1 and OFFNT2 domains. In addition, this solution would still provide temporal coverage out to five days. **Appendices D and E** provide samples of the offshore waters forecasts produced by combining the proposed offshore waters zones to replicate the current offshore waters zone configuration to prepare a script for VOBRA purposes.

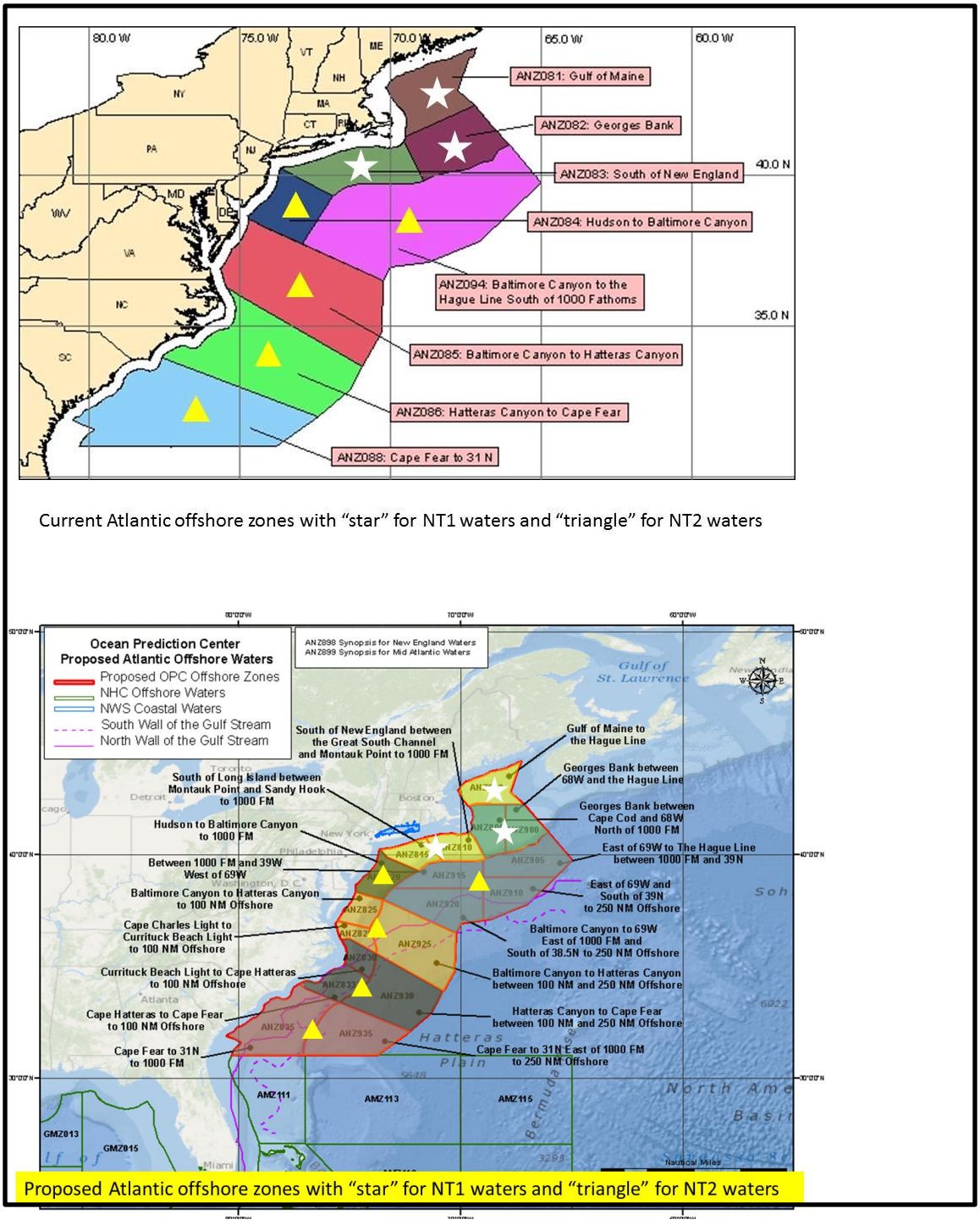

Figure 8. Top panel shows existing zone combination for Atlantic VOBRA broadcasts. Bottom panel shows proposed zone combination for Atlantic VOBRA broadcasts. The "star" symbol is used to show areas in the NT1 waters and the "triangle" symbol represents the NT2 waters area.

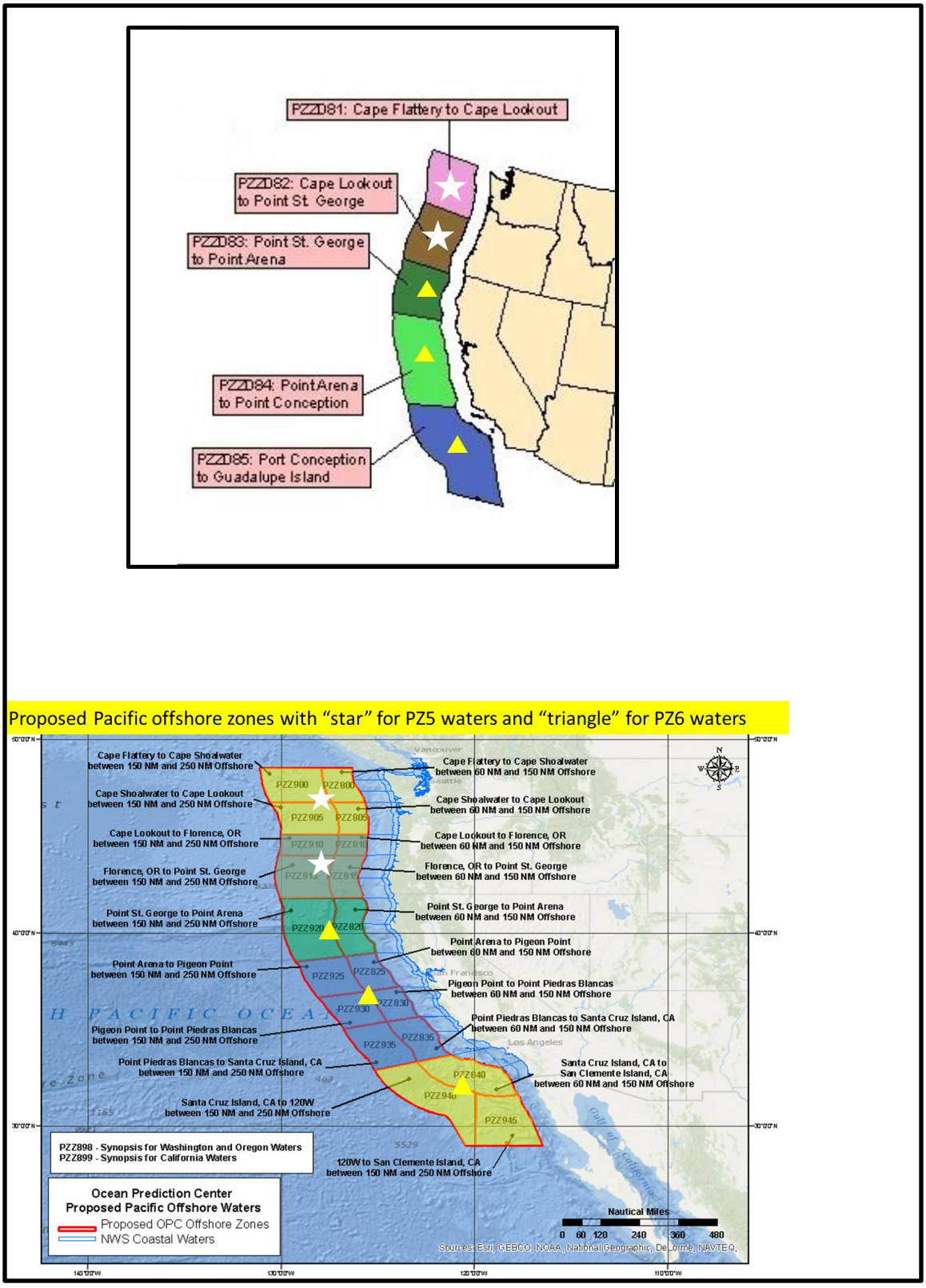

Figure 9. Top panel shows existing zone combination for Pacific VOBRA broadcasts. Bottom panel shows proposed zone combination for Pacific VOBRA broadcasts. The "star" symbol is used to show areas in the PZ5 waters and the "triangle" symbol represents the PZ6 waters area.

For the Pacific, the broadcast is transmitted from the Point Reyes CA transmitter, and consists of HF transmissions at 6, 8, and 12 MHz The current USCGS schedule allows 90 minutes for the broadcast of all offshore forecasts, in addition to the high seas forecasts for the east Pacific and the north central Pacific. The Tsunami Watch/Warning product as well as the Public Tsunami Message are also broadcast. These are read by a voice synthesizer ("Iron Mike") at 0430Z, 1030Z, 1630Z, and 2230Z. The current USCG Voice Broadcast (VOBRA) repeats the OFFPZ5 and OFFPZ6 verbatim.

The solutions described above will provide an improved service to the marine community.

Operational Backup of OPC with the New Offshore Zones

OPC will produce a set of zones for both the Atlantic and Pacific that mirror the "old" zones for backup purposes. In order to facilitate text backup, the same number of zone combinations that were produced before zone changes, eight in the Atlantic and five in the Pacific, will routinely be prepared with GFE. In the event that OPC has to request unscheduled service backup, the backup offices could manually edit the text for the five Pacific zones or eight Atlantic zones as they currently do for backup. They would always be able to start with the most current forecast produced by OPC in the old zone groupings. The logic behind this is that with the new zones there are too many to be able to manually edit the numbers of zones required (18 for the Atlantic and 19 for the Pacific). In the long term, OPC is pursuing gridded backup which would eliminate the need for producing legacy text forecasts routinely.

Draft Service Change Notice

NOUS41 KWBC DDHHMM

PNSWSH

Service Change Notice 13-XX
National Weather Service Headquarters Washington DC
900 AM EDT OCT 31 2013

To: Subscribers:
-Family of Services
-NOAA Weather Wire Service
-Emergency Managers Weather Information Network
-NOAAPORT
Other NWS Partners, Users and Employees

From: Mark A. Tew
Chief, Marine and Coastal Services Branch

Subject: Changes in Offshore Waters Marine Zones
For the New England and West Central North Atlantic,
and for the Washington, Oregon and California waters
in the Pacific Ocean Effective April 1, 2014

Effective Tuesday April 1, 2014 at 200 pm Eastern Daylight Time (EDT) or 1800 Coordinated Universal Time (UTC), the Ocean Prediction Center (OPC) of the National Centers for Environmental Prediction (NCEP) will reconfigure its marine zones for the offshore waters in the both the Atlantic and Pacific Oceans. The Atlantic offshore waters include New England and the West Central North Atlantic. For the Pacific this includes the offshore waters off Washington, Oregon and California.

Currently there are eight (8) marine zones covering the OPC Atlantic offshore waters and five (5) marine zones covering the Pacific offshore waters. These zones will be reconfigured into eighteen marine zones (18) for the Atlantic offshore waters and nineteen (19) marine zones to cover the Pacific offshore waters. Marine observations, local effects, and customer feedback all indicate that the current marine zones are too large to provide the necessary detail for the marine community. This reconfiguration will serve to improve the precision of marine warnings, forecasts, and other services by allowing forecasters to be more area specific.

Table 1 lists the current marine zones and corresponding UGCs for which OPC issues forecasts and warnings.

Table 2 lists the marine zones and corresponding UGCs for which OPC will issue forecasts and warnings effective April 1, 2014.

Table 3 lists all of the products issued by OPC that will be affected by the marine zone changes.

Table 4 lists future product headers for USCG voice broadcasts

Table 1. Current marine zones and corresponding UGCs
For which OPC issues offshore forecasts and warnings:

OPC Atlantic Ocean Offshore waters

UGC	Zone Name
ANZ080	Synopsis for New England Waters.
ANZ081	Gulf of Maine to the Hague Line. ANZ081
ANZ082	Georges Bank from the Northeast Channel to the Great South Channel including the waters east of Cape Cod to the Hague Line.
ANZ083	South of New England from the Great South Channel to Hudson Canyon including the waters south of Martha's Vineyard and Nantucket Island out to 1000 fathoms.
ANZ089	Synopsis for Mid Atlantic Waters.
ANZ084	Hudson to Baltimore Canyon.
ANZ085	Baltimore Canyon to Hatteras Canyon out to 36N 70W to 34N 71W.
ANZ086	Hatteras Canyon to Cape Fear out to 34N 71W to 32N 73W.
ANZ088	Cape Fear to 31N out to 32N 73W to 31N 74W.
ANZ094	Baltimore Canyon to the Hague Line South of 1000 Fathoms

OPC Pacific Ocean Offshore waters

UGC	Zone Name
PZZ080	Synopsis for Washington and Oregon Waters
PZZ081	Cape Flattery to Cape Lookout
PZZ082	Cape Lookout to Point St. George
PZZ089	Synopsis for California Waters Offshore
PZZ083	Point St. George to Point Arena
PZZ084	Point Arena to Point Conception
PZZ085	Point Conception to Guadalupe Island

Table 2. Marine zones and corresponding UGCs for which OPC will issue forecasts and warnings effective April 1, 2014:

OPC Atlantic Offshore Waters

NEW UGC New Marine Zone Name

ANZ898 - Synopsis for New England waters.
ANZ899 - Synopsis for Mid Atlantic waters.
ANZ800 - Gulf of Maine to the Hague Line.
ANZ805 - Georges Bank between Cape Cod and 68W north of 1000 fathoms.
ANZ810 - South of New England between the Great South Channel and Montauk Point to 1000 fathoms.
ANZ815 - South of Long Island between Montauk Point and Sandy Hook to 1000 fathoms.
ANZ820 - Hudson Canyon to Baltimore Canyon to 1000 fathoms.
ANZ825 - Baltimore Canyon to Hatteras Canyon to 100 NM offshore.
ANZ828 - Cape Charles Light to Currituck Beach Light to 100 NM offshore.
ANZ830 - Currituck Beach Light to Cape Hatteras to 100 NM offshore.
ANZ833 - Cape Hatteras to Cape Fear to 100 NM offshore.
ANZ835 - Cape Fear to 31N to 1000 FM.
ANZ900 - Georges Bank between 68W and the Hague Line.
ANZ905 - East of 69W to the Hague Line between 1000 fathoms and 39N.
ANZ910 - East of 69W and south of 39N to 250 NM offshore.
ANZ915 - Between 1000 fathoms and 39N west of 69W.
ANZ920 - Baltimore Canyon to 69W east of 1000 fathoms and south of 38.5N to 250 NM offshore.
ANZ925 - Baltimore Canyon to Hatteras Canyon between 100 NM and 250 NM offshore.
ANZ930 - Hatteras Canyon to Cape Fear 100 NM and 250 NM offshore.
ANZ935 - Cape Fear to 31N east of 1000 fathoms to 250 NM offshore.

OPC Pacific Offshore Waters

NEW UGC New Marine Zone Name

PZZ898 - Synopsis for Washington and Oregon waters.

PZZ899 - Synopsis for California waters.
PZZ800 - Cape Flattery to Cape Shoalwater between 60 NM and 150 NM offshore.
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PZZ935 - Point Piedras Blancas to Santa Cruz Island, CA between 150 NM and 250 NM offshore.
PZZ940 - Santa Cruz Island, CA to 120W between 150 NM and 250 NM offshore.
PZZ945 - 120W to San Clemente Island, CA between 150 NM and 250 NM offshore.

To view graphical images of the current marine zones and the proposed marine zones for which OPC will issue forecasts and warnings effective April 1, 2014 go to the following web site:

http://www.opc.ncep.noaa.gov/new_zones.php

TABLE 3. OPC products affected by the marine zone changes effective April 1, 2014:

Atlantic Product Name	WMO Heading	AWIPS ID
Offshore Waters Forecast	FZNT21 KWNM	OFFNT1
Offshore Waters Forecast	FZNT22 KWNM	OFFNT2
Boston MA NAVTEX Forecast	FZNT23 KWNM	OFFN01
Portsmouth VA NAVTEX Forecast	FZNT24 KWNM	OFFN02
Charleston SC NAVTEX Forecast	FZNT25 KWNM	OFFN03
Pacific Product Name	**WMO Heading**	**AWIPS ID**
Offshore Waters Forecast	FZPN25 KWBC	OFFPZ5
Offshore Waters Forecast	FZPN26 KWBC	OFFPZ6
Astoria OR NAVTEX Forecast	FZPN24 KWMN	OFFN09
San Francisco CA NAVTEX Forecast	FZPN23 KWMN	OFFN08
Cambria CA NAVTEX Forecast	FZPN22 KWMN	OFFN07

Customers must reprogram affected hardware and software to continue correctly processing the products listed in Table 3.

Also customers using a graphical representation of these zones must download an updated marine zone map shapefile to correctly depict the marine forecast areas for the Atlantic and Pacific Ocean offshore marine zones.

An updated marine zone map shapefile containing the new zones effective April 1, 2014 is available for download from the following website:

www.nws.noaa.gov/geodata/catalog/wsom/html/marinezones.htm

In order to meet the time constraints for broadcast via U.S. Coast Guard NAVTEX, the NAVTEX products will combine the forecasts for the zones in such a way that they will be similar to the NAVTEX forecasts before reconfiguration.

In order to meet the time constraints for voice broadcast via the U.S. Coast Guard, four new products will be made available as listed in Table 4. These products will combine forecasts for the 18 zones in the Atlantic and 19 zones in the Pacific in such a way that they will be similar to the Offshore Waters Forecasts before reconfiguration.

TABLE 4. Future Product Headers for USCG Voice Broadcasts:

Product Name	WMO Heading	AWIPS ID
Broadcast Text for offshore New England	FZNT33 KWBC	NFDOFFN31
Broadcast Text for offshore mid Atlantic	FZNT34 KWBC	NFDOFFN32
Broadcast Text for offshore Washington/Oregon	FZNT35 KWBC	NFDOFFN35
Broadcast Text for offshore California	FZNT36 KWBC	NFDOFFN36

If you have any questions or comments about this reconfiguration of OPC offshore waters marine zones please contact:

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Marine Coastal Services Branch
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Silver Spring, MD 20910
301-713-1677 x 125
Mark.Tew@noaa.gov

National Weather Service Change notices are posted at:

http://www.weather.gov/os/notif.htm

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NNNN

Appendix A. Sample text output for new Offshore Waters Zones for the Atlantic (OFFNT1)

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FZNT21 KWBC 120800
OFFNT1

OFFSHORE WATERS FORECAST
NWS OCEAN PREDICTION CENTER WASHINGTON DC
400 AM EDT MON AUG 12 2013

NEW ENGLAND CONTINENTAL SHELF AND SLOPE WATERS FROM 25 NM
OFFSHORE TO THE HAGUE LINE...EXCEPT TO 1000 FM S OF NEW ENGLAND

SEAS GIVEN AS SIGNIFICANT WAVE HEIGHT...WHICH IS THE AVERAGE
HEIGHT OF THE HIGHEST 1/3 OF THE WAVES. INDIVIDUAL WAVES MAY BE
MORE THAN TWICE THE SIGNIFICANT WAVE HEIGHT.

ANZ080-121930-
400 AM EDT MON AUG 12 2013

.SYNOPSIS FOR NEW ENGLAND WATERS...A STATIONARY FRONT SE OF THE
WATERS NEAR CAPE HATTERAS WILL DRIFT N AND WEAKEN TODAY INTO TUE
AS WEAK LOW PRES MOVES E ALONG THE FRONT. AN AREA OF HIGH PRES
JUST W OF THE REGION WILL MOVE E THROUGH THE WATERS EARLY TODAY.
ANOTHER COLD FRONT WILL MOVE SE OVER THE REGION TUE NIGHT...THEN
PASS S OF THE WATERS WED BEFORE STALLING OFF THE MID ATLANTIC
COAST THU. A LOW WILL DEVELOP ALONG THE FRONT FRI AND LIFT IT N
AS A WARM FRONT. ANOTHER AREA OF HIGH PRES WILL BUILD E FROM THE
GREAT LAKES WED...PASS THROUGH THE WATERS THU...THEN MOVE E OF
THE AREA FRI.

$$

ANZ800-121930-
GULF OF MAINE TO THE HAGUE LINE-
400 AM EDT MON AUG 12 2013

.TODAY...W WINDS 5 TO 10 KT...BECOMING S TO SW 5 TO 15 KT IN THE
AFTERNOON. SEAS 2 TO 3 FT.
.TONIGHT...S TO SW WINDS 10 TO 15 KT. SEAS 2 TO 4 FT.
.TUE...S TO SW WINDS 10 TO 20 KT...BECOMING W TO SW IN THE
AFTERNOON. SEAS 2 TO 4 FT. TSTMS AND AREAS OF FOG WITH VSBY 1 NM
OR LESS.
.TUE NIGHT...W TO SW WINDS 10 TO 20 KT...BECOMING W 10 TO 15 KT
AFTER MIDNIGHT. SEAS 3 TO 5 FT.
.WED...N TO NW WINDS 5 TO 15 KT...BECOMING W TO NW LATE. SEAS
2 TO 4 FT.
.THU...W TO NW WINDS 5 TO 15 KT...BECOMING S TO SW 10 TO 20 KT
LATE. SEAS 2 TO 4 FT.
.FRI...W TO SW WINDS 5 TO 10 KT...BECOMING S TO SW 5 TO 15 KT
LATE. SEAS 2 TO 3 FT.

$$

ANZ805-121930-
GEORGES BANK BETWEEN CAPE COD AND 68W NORTH OF 1000 FATHOMS-
400 AM EDT MON AUG 12 2013

.TODAY...W TO SW WINDS LESS THAN 10 KT...BECOMING S TO SW IN THE
AFTERNOON. SEAS 2 TO 3 FT.
.TONIGHT...S TO SW WINDS 10 TO 15 KT. SEAS 3 TO 4 FT.
.TUE...S TO SW WINDS 10 TO 15 KT...BECOMING W TO SW 5 TO 15 KT IN
```

THE AFTERNOON. SEAS 3 TO 4 FT. TSTMS AND AREAS OF FOG WITH VSBY
1 NM OR LESS.
.TUE NIGHT...S TO SW WINDS 10 TO 20 KT...BECOMING W TO SW 5 TO
15 KT AFTER MIDNIGHT. SEAS 3 TO 4 FT. TSTMS.
.WED...W TO NW WINDS 5 TO 15 KT...BECOMING N TO NW LATE. SEAS
3 TO 5 FT.
.THU...N TO NW WINDS LESS THAN 10 KT...BECOMING S TO SW LATE.
SEAS 2 TO 4 FT.
.FRI...SW WINDS 5 TO 10 KT...BECOMING E 10 TO 20 KT LATE. SEAS
2 TO 3 FT...BUILDING TO 3 TO 5 FT LATE.

$$

ANZ900-121930-
GEORGES BANK BETWEEN 68W AND THE HAGUE LINE-
400 AM EDT MON AUG 12 2013

.TODAY...W TO NW WINDS LESS THAN 10 KT...BECOMING S TO SW IN THE
AFTERNOON. SEAS 3 FT.
.TONIGHT...S TO SW WINDS 10 TO 15 KT. SEAS 3 TO 4 FT.
.TUE...S TO SW WINDS 15 TO 20 KT...BECOMING W TO SW 10 TO 20 KT
IN THE AFTERNOON. SEAS 3 TO 5 FT. SCATTERED SHOWERS AND TSTMS
WITH POSSIBLE FOG WITH VSBY 1 NM OR LESS.
.TUE NIGHT...W TO SW WINDS 5 TO 15 KT. SEAS 3 TO 5 FT. TSTMS AND
AREAS OF FOG WITH VSBY 1 NM OR LESS.
.WED...W TO NW WINDS 5 TO 15 KT...BECOMING N TO NW LATE. SEAS
3 TO 5 FT.
.THU...W TO NW WINDS LESS THAN 10 KT...BECOMING W TO SW LATE.
SEAS 3 TO 4 FT.
.FRI...E TO SE WINDS LESS THAN 10 KT...INCREASING TO 10 TO 20 KT
LATE. SEAS 2 TO 4 FT.

$$

ANZ810-121930-
SOUTH OF NEW ENGLAND...BETWEEN THE GREAT SOUTH CHANNEL AND MONTAUK
POINT TO 1000 FM-
400 AM EDT MON AUG 12 2013

.TODAY...W TO SW WINDS LESS THAN 10 KT...BECOMING S TO SW IN THE
MORNING...THEN...INCREASING TO 10 TO 15 KT IN THE AFTERNOON. SEAS
2 TO 3 FT.
.TONIGHT...S TO SW WINDS 5 TO 15 KT. SEAS 2 TO 3 FT.
.TUE...W TO SW WINDS 5 TO 15 KT...BECOMING W TO NW IN THE
AFTERNOON. SEAS 2 TO 4 FT. CHANCE OF RAIN IN THE AFTERNOON.
.TUE NIGHT...S TO SW WINDS 5 TO 15 KT...BECOMING W TO SW AFTER
MIDNIGHT. SEAS 2 TO 3 FT.
.WED...W TO NW WINDS 10 TO 15 KT...BECOMING N TO NE 5 TO 15 KT
LATE. SEAS 3 TO 5 FT.
.THU...E TO SE WINDS LESS THAN 10 KT...BECOMING S TO SE LATE.
SEAS 2 TO 4 FT.
.FRI...E TO SE WINDS LESS THAN 10 KT...BECOMING E TO NE 10 TO
20 KT LATE. SEAS 2 TO 3 FT...BUILDING TO 3 TO 5 FT LATE.

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ANZ815-121930-
SOUTH OF LONG ISLAND...BETWEEN MONTAUK POINT AND SANDY HOOK…TO
1000 FM-
400 AM EDT MON AUG 12 2013

.TODAY...S TO SW WINDS LESS THAN 10 KT. SEAS 2 TO 3 FT.
.TONIGHT...SW WINDS 5 TO 10 KT. SEAS 2 TO 3 FT.

.TUE...W TO NW WINDS 5 TO 10 KT...BECOMING S TO SW 5 TO 15 KT IN THE AFTERNOON. SEAS 2 TO 3 FT. TSTMS AND CHANCE OF RAIN.
.TUE NIGHT...S TO SW WINDS 5 TO 15 KT...BECOMING W TO NW 10 TO 15 KT AFTER MIDNIGHT. SEAS 2 TO 3 FT.
.WED...N TO NW WINDS 5 TO 15 KT. SEAS 2 TO 4 FT.
.THU...N TO NE WINDS LESS THAN 10 KT...BECOMING S LATE. SEAS 2 TO 3 FT.
.FRI...E TO NE WINDS LESS THAN 10 KT...INCREASING TO 5 TO 15 KT LATE. SEAS 2 TO 4 FT.

$$

.FORECASTER OPC. OCEAN PREDICTION CENTER.

Appendix B. Sample text output for new Offshore Waters Zones for the Pacific (OFFPZ5)

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FZPN25 KWBC 120730
OFFPZ5

OFFSHORE WATERS FORECAST
NWS OCEAN PREDICTION CENTER WASHINGTON DC
330 AM PDT MON AUG 12 2013

WASHINGTON AND OREGON WATERS-
INNER WATERS FROM  60 NM TO 150 NM OFFSHORE.
OUTER WATERS FROM 150 NM TO 250 NM OFFSHORE.

SEAS GIVEN AS SIGNIFICANT WAVE HEIGHT...WHICH IS THE AVERAGE
HEIGHT OF THE HIGHEST 1/3 OF THE WAVES. INDIVIDUAL WAVES MAY BE
MORE THAN TWICE THE SIGNIFICANT WAVE HEIGHT.

PZZ080-122200-
330 AM PDT MON AUG 12 2013

.SYNOPSIS FOR WASHINGTON AND OREGON WATERS...HIGH PRES WILL
SLOWLY BUILD E ACROSS THE WATERS OVERNIGHT...THEN GRADUALLY
WEAKEN MON INTO MON NIGHT. LOW PRES AND A COLD FRONT WILL
APPROACH THE REGION TUE AND TUE NIGHT. THE LOW WILL PASS JUST NW
OF THE WATERS WED AND THU...AS THE COLD FRONT DRIFTS E ACROSS THE
AREA AND DISSIPATES. A WEAKENING LOW WILL MOVE NE ACROSS THE NRN
WATERS FRI.

$$

PZZ800-122200-
CAPE FLATTERY TO CAPE SHOALWATER BETWEEN 60 NM AND 150 NM OFFSHORE-
330 AM PDT MON AUG 12 2013

.TODAY...W TO SW WINDS LESS THAN 5 KT. SEAS 3 TO 4 FT.
.TONIGHT...W TO SW WINDS LESS THAN 5 KT...BECOMING S AFTER
MIDNIGHT. SEAS 3 FT.
.TUE...S TO SE WINDS LESS THAN 10 KT. SEAS 2 TO 4 FT.
.TUE NIGHT...S TO SW WINDS LESS THAN 10 KT...BECOMING S TO SE
AFTER MIDNIGHT. SEAS 2 TO 4 FT.
.WED...S TO SE WINDS 5 TO 15 KT...BECOMING S TO SW LATE. SEAS
3 TO 5 FT.
.THU...S TO SW WINDS LESS THAN 5 KT...BECOMING S TO SE LATE. SEAS
3 TO 4 FT.
.FRI...S TO SE WINDS 5 TO 10 KT...BECOMING S TO SW LATE. SEAS
3 TO 5 FT.

$$

PZZ900-122200-
CAPE FLATTERY TO CAPE SHOALWATER BETWEEN 150 NM AND 250 NM OFFSHORE-
330 AM PDT MON AUG 12 2013

.TODAY...W TO NW WINDS LESS THAN 5 KT...BECOMING S TO SW 5 TO
15 KT IN THE AFTERNOON. SEAS 3 TO 4 FT.
.TONIGHT...S TO SE WINDS 5 TO 15 KT...INCREASING TO 10 TO 20 KT
AFTER MIDNIGHT. SEAS 3 TO 5 FT.
.TUE...S TO SE WINDS 10 TO 20 KT. SEAS 4 TO 7 FT. CHANCE OF RAIN.
.TUE NIGHT...S TO SE WINDS 10 TO 20 KT. SEAS 4 TO 7 FT. CHANCE OF
RAIN AND TSTMS.
.WED...S TO SW WINDS 10 TO 20 KT...DIMINISHING TO 5 TO 15 KT
LATE. SEAS 4 TO 6 FT.
```

.THU...S TO SW WINDS 5 TO 10 KT...BECOMING S TO SE 10 TO 20 KT
LATE. SEAS 3 TO 5 FT.
.FRI...S TO SE WINDS 5 TO 15 KT...BECOMING NW LATE. SEAS 3 TO
6 FT.

$$

PZZ805-122200-
CAPE SHOALWATER TO CAPE LOOKOUT BETWEEN 60 NM AND 150 NM OFFSHORE-
330 AM PDT MON AUG 12 2013

.TODAY...W TO NW WINDS LESS THAN 5 KT. SEAS 3 TO 4 FT.
.TONIGHT...W TO NW WINDS LESS THAN 5 KT...BECOMING SE AFTER
MIDNIGHT. SEAS 3 FT.
.TUE...S WINDS LESS THAN 10 KT. SEAS 2 TO 3 FT.
.TUE NIGHT...S WINDS LESS THAN 10 KT...BECOMING S TO SW AFTER
MIDNIGHT. SEAS 2 TO 4 FT.
.WED...S WINDS 5 TO 15 KT...BECOMING S TO SW 5 TO 10 KT LATE.
SEAS 3 TO 5 FT.
.THU...S TO SE WINDS LESS THAN 5 KT. SEAS 3 TO 4 FT.
.FRI...S TO SW WINDS 5 TO 10 KT. SEAS 3 TO 5 FT.

$$

PZZ905-122200-
CAPE SHOALWATER TO CAPE LOOKOUT BETWEEN 150 NM AND 250 NM OFFSHORE-
330 AM PDT MON AUG 12 2013

.TODAY...W TO NW WINDS LESS THAN 5 KT...BECOMING NW IN THE
MORNING...THEN...BECOMING S TO SW IN THE AFTERNOON. SEAS 3 TO
4 FT.
.TONIGHT...S TO SW WINDS 5 TO 15 KT...BECOMING S TO SE 10 TO
20 KT AFTER MIDNIGHT. SEAS 3 TO 5 FT.
.TUE...S WINDS 10 TO 20 KT. SEAS 4 TO 7 FT.
.TUE NIGHT...S TO SE WINDS 10 TO 20 KT...BECOMING S TO SW AFTER
MIDNIGHT. SEAS 3 TO 6 FT. CHANCE OF TSTMS AFTER MIDNIGHT.
.WED...S TO SW WINDS 5 TO 15 KT...DIMINISHING TO LESS THAN 10 KT
LATE. SEAS 4 TO 6 FT.
.THU...S TO SE WINDS LESS THAN 10 KT...INCREASING TO 5 TO 15 KT
LATE. SEAS 3 TO 5 FT.
.FRI...S TO SW WINDS 5 TO 15 KT...BECOMING NW LATE. SEAS 3 TO
5 FT.

$$

PZZ810-122200-
CAPE LOOKOUT TO FLORENCE OR...BETWEEN 60 NM AND 150 NM OFFSHORE-

330 AM PDT MON AUG 12 2013

.TODAY...N TO NW WINDS LESS THAN 5 KT...BECOMING LESS THAN 10 KT
IN THE AFTERNOON. SEAS 3 TO 4 FT.
.TONIGHT...N TO NW WINDS LESS THAN 10 KT...BECOMING N AFTER
MIDNIGHT. SEAS 3 FT.
.TUE...SE WINDS LESS THAN 5 KT...BECOMING S IN THE AFTERNOON.
SEAS 2 TO 3 FT.
.TUE NIGHT...S TO SE WINDS LESS THAN 10 KT. SEAS 2 TO 4 FT.
.WED...S WINDS 5 TO 15 KT...BECOMING S TO SW LATE. SEAS 3 TO
5 FT.
.THU...S TO SE WINDS LESS THAN 10 KT...BECOMING S TO SW LATE.
SEAS 3 TO 4 FT.
.FRI...W TO SW WINDS 5 TO 10 KT. SEAS 3 TO 5 FT.

$$

PZZ910-122200-
CAPE LOOKOUT TO FLORENCE OR BETWEEN 150 NM AND 250 NM OFFSHORE-
330 AM PDT MON AUG 12 2013

.TODAY...NW WINDS LESS THAN 5 KT...BECOMING S IN THE MORNING...
THEN...INCREASING TO 5 TO 15 KT IN THE AFTERNOON. SEAS 3 TO 4 FT.
.TONIGHT...S TO SW WINDS 5 TO 15 KT...BECOMING S TO SE AFTER
MIDNIGHT. SEAS 3 TO 5 FT.
.TUE...S WINDS 10 TO 20 KT. SEAS 3 TO 6 FT.
.TUE NIGHT...S WINDS 10 TO 20 KT...BECOMING S TO SW 5 TO 15 KT
AFTER MIDNIGHT. SEAS 3 TO 6 FT. CHANCE OF TSTMS AFTER MIDNIGHT.
.WED...S TO SW WINDS 5 TO 15 KT...BECOMING W TO SW LATE. SEAS
4 TO 5 FT.
.THU...S WINDS LESS THAN 10 KT...BECOMING S TO SW LATE. SEAS 3 TO
5 FT.
.FRI...S TO SW WINDS 5 TO 15 KT...BECOMING W TO SW 10 TO 15 KT
LATE. SEAS 3 TO 5 FT.

$$

PZZ815-122200-
FLORENCE OR TO POINT ST. GEORGE BETWEEN 60 NM AND 150 NM OFFSHORE-
330 AM PDT MON AUG 12 2013

.TODAY...N TO NW WINDS 5 TO 15 KT. SEAS 3 TO 4 FT.
.TONIGHT...N TO NW WINDS 5 TO 15 KT...BECOMING N TO NE AFTER
MIDNIGHT. SEAS 3 TO 4 FT.
.TUE...N TO NE WINDS LESS THAN 10 KT...BECOMING S IN THE
AFTERNOON. SEAS 2 TO 3 FT.
.TUE NIGHT...S TO SW WINDS LESS THAN 10 KT. SEAS 2 TO 4 FT.
.WED...S TO SW WINDS 5 TO 15 KT...DIMINISHING TO LESS THAN 10 KT
LATE. SEAS 3 TO 5 FT.
.THU...S WINDS LESS THAN 10 KT. SEAS 3 TO 4 FT.
.FRI...W TO SW WINDS LESS THAN 10 KT. SEAS 3 TO 5 FT.

$$

PZZ915-122200-
FLORENCE OR TO POINT ST. GEORGE BETWEEN 150 NM AND 250 NM OFFSHORE-
330 AM PDT MON AUG 12 2013

.TODAY...SW WINDS LESS THAN 10 KT...BECOMING S IN THE MORNING...
THEN...BECOMING S TO SW IN THE AFTERNOON. SEAS 3 TO 4 FT.
.TONIGHT...S TO SW WINDS 5 TO 15 KT. SEAS 3 TO 5 FT.
.TUE...S TO SE WINDS 10 TO 20 KT...BECOMING S TO SW IN THE
AFTERNOON. SEAS 3 TO 6 FT.
.TUE NIGHT...S WINDS 5 TO 15 KT. SEAS 3 TO 5 FT.
.WED...S WINDS 5 TO 15 KT...BECOMING NE LATE. SEAS 3 TO 5 FT.
.THU...S WINDS LESS THAN 10 KT...BECOMING S TO SW LATE. SEAS 3 TO
5 FT.
.FRI...S TO SW WINDS 5 TO 15 KT...BECOMING W TO NW 5 TO 10 KT
LATE. SEAS 3 TO 6 FT.

$$

.FORECASTER OPC. OCEAN PREDICTION CENTER.

Appendix C. Example of the NAVTEX product for the Boston transmitter (OFFN01) produced by text formatters.

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FZNT23 KWNM 120932
OFFN01

NAVTEX MARINE FORECAST FOR NE US WATERS
NWS OCEAN PREDICTION CENTER WASHINGTON DC
531 AM EDT MON AUG 12 2013

...PLEASE REFER TO COASTAL WATERS FORECASTS (CWF) AVAILABLE
THROUGH NOAA WEATHER RADIO AND OTHER MEANS FOR DETAILED
COASTAL WATERS FORECASTS...

.SYNOPSIS...A STATIONARY FRONT SE OF THE WATERS NEAR CAPE
HATTERAS WILL DRIFT N AND WEAKEN TODAY INTO TUE AS WEAK LOW PRES
MOVES E ALONG THE FRONT. AN AREA OF HIGH PRES JUST W OF THE
REGION WILL MOVE E THROUGH THE WATERS EARLY TODAY. ANOTHER COLD
FRONT WILL MOVE SE OVER THE REGION TUE NIGHT...THEN PASS S OF
THE WATERS WED BEFORE STALLING OFF THE MID ATLANTIC COAST THU. A
LOW WILL DEVELOP ALONG THE FRONT FRI AND LIFT IT N AS A WARM
FRONT. ANOTHER AREA OF HIGH PRES WILL BUILD E FROM THE GREAT
LAKES WED...PASS THROUGH THE WATERS THU...THEN MOVE E OF THE
AREA FRI.


EASTPORT MAINE TO CAPE COD...EAST TO THE HAGUE LINE

.TODAY...W TO SW WINDS 5 TO 10 KT...BECOMING S TO SW 5 TO 15 KT
IN THE AFTERNOON. SEAS 2 TO 3 FT.
.TONIGHT...S TO SW WINDS 10 TO 15 KT. SEAS 2 TO 4 FT.
.TUE...S TO SW WINDS 10 TO 20 KT...BECOMING W TO SW IN THE
AFTERNOON. SEAS 2 TO 4 FT. CHANCE OF TSTMS AND AREAS OF FOG WITH
VSBY 1 NM OR LESS.
.TUE NIGHT...W TO SW WINDS 10 TO 20 KT...BECOMING 10 TO 15 KT
AFTER MIDNIGHT. SEAS 3 TO 5 FT.
.WED...W TO NW WINDS 5 TO 15 KT. SEAS 2 TO 4 FT.
.THU...W TO SW WINDS 10 TO 20 KT. SEAS 2 TO 4 FT.
.FRI...S TO SW WINDS 5 TO 15 KT. SEAS 2 TO 3 FT.


CAPE COD TO NANTUCKET SHOALS AND GEORGES BANK...EAST TO THE
HAGUE LINE

.TODAY...W TO SW WINDS LESS THAN 10 KT...BECOMING S TO SW IN THE
AFTERNOON. SEAS 2 TO 3 FT.
.TONIGHT...S TO SW WINDS 10 TO 15 KT. SEAS 3 TO 4 FT.
.TUE...S TO SW WINDS 10 TO 20 KT...BECOMING W TO SW IN THE
AFTERNOON. SEAS 3 TO 5 FT. CHANCE OF TSTMS AND AREAS OF FOG WITH
VSBY 1 NM OR LESS.
.TUE NIGHT...W TO SW WINDS 5 TO 15 KT. SEAS 3 TO 5 FT. AREAS OF
FOG WITH VSBY 1 NM OR LESS IN THE EVENING. CHANCE OF TSTMS.
.WED...N TO NW WINDS 5 TO 15 KT. SEAS 3 TO 5 FT.
.THU...W TO SW WINDS LESS THAN 10 KT. SEAS 2 TO 4 FT.
.FRI...E TO SE WINDS 10 TO 20 KT. SEAS 3 TO 5 FT.


SOUTH OF NEW ENGLAND...OUT TO 1000 FMS

.TODAY...W TO SW WINDS LESS THAN 10 KT...BECOMING S TO SW IN THE
MORNING...THEN...INCREASING TO 5 TO 15 KT IN THE AFTERNOON. SEAS
2 TO 3 FT.
```

.TONIGHT...S TO SW WINDS 5 TO 15 KT. SEAS 2 TO 3 FT.
.TUE...W TO SW WINDS 5 TO 15 KT...BECOMING S IN THE AFTERNOON.
SEAS 2 TO 4 FT. CHANCE OF TSTMS. RAIN IN THE AFTERNOON.
.TUE NIGHT...S TO SW WINDS 5 TO 15 KT...BECOMING W TO NW AFTER
MIDNIGHT. SEAS 2 TO 3 FT.
.WED...N TO NW WINDS 5 TO 15 KT. SEAS 3 TO 5 FT.
.THU...S TO SE WINDS LESS THAN 10 KT. SEAS 2 TO 4 FT.
.FRI...E TO NE WINDS 10 TO 20 KT. SEAS 3 TO 5 FT.

$$

.FORECASTER OPC. OCEAN PREDICTION CENTER.

Appendix D. Example output of script which utilizes zone combining in the Atlantic offshore waters (OFFNT1) forecast to produce the VOBRA.

```
FZNT33 KWBC 120800
OFFN31

MARINE WEATHER HF VOICE BROADCAST
NWS OCEAN PREDICTION CENTER WASHINGTON DC
400 AM EDT MON AUG 12 2013

MARINE WEATHER HF VOICE BROADCAST FOR THE NEW ENGLAND
CONTINENTAL SHELF AND SLOPE WATERS FROM 25 NM OFFSHORE TO THE
HAGUE LINE...EXCEPT TO 1000 FM S OF NEW ENGLAND

SEAS GIVEN AS SIGNIFICANT WAVE HEIGHT...WHICH IS THE AVERAGE
HEIGHT OF THE HIGHEST 1/3 OF THE WAVES. INDIVIDUAL WAVES MAY BE
MORE THAN TWICE THE SIGNIFICANT WAVE HEIGHT.

SYNOPSIS FOR NEW ENGLAND WATERS

.SYNOPSIS...A STATIONARY FRONT SE OF THE WATERS NEAR CAPE
HATTERAS WILL DRIFT N AND WEAKEN TODAY INTO TUE AS WEAK LOW
PRES MOVES E ALONG THE FRONT. AN AREA OF HIGH PRES JUST W OF
THE REGION WILL MOVE E THROUGH THE WATERS EARLY TODAY.
ANOTHER COLD FRONT WILL MOVE SE OVER THE REGION TUE NIGHT...THEN
PASS S OF THE WATERS WED BEFORE STALLING OFF THE MID ATLANTIC
COAST THU. A LOW WILL DEVELOP ALONG THE FRONT FRI AND LIFT IT N
AS A WARM FRONT. ANOTHER AREA OF HIGH PRES WILL BUILD E FROM THE
GREAT LAKES WED...PASS THROUGH THE WATERS THU...THEN MOVE E OF
THE AREA FRI.

GULF OF MAINE TO THE HAGUE LINE-

.TODAY...W WINDS 5 TO 10 KT...BECOMING S TO SW 5 TO 15 KT IN THE
AFTERNOON. SEAS 2 TO 3 FT.
.TONIGHT...S TO SW WINDS 10 TO 15 KT. SEAS 2 TO 4 FT.
.TUE...S TO SW WINDS 10 TO 20 KT...BECOMING W TO SW IN THE
AFTERNOON. SEAS 2 TO 4 FT. TSTMS AND AREAS OF FOG WITH VSBY 1 NM
OR LESS.
.TUE NIGHT...W TO SW WINDS 10 TO 20 KT...BECOMING W 10 TO 15 KT
AFTER MIDNIGHT. SEAS 3 TO 5 FT.
.WED...N TO NW WINDS 5 TO 15 KT...BECOMING W TO NW LATE. SEAS
2 TO 4 FT.
.THU...W TO NW WINDS 5 TO 15 KT...BECOMING S TO SW 10 TO 20 KT
LATE. SEAS 2 TO 4 FT.
.FRI...W TO SW WINDS 5 TO 10 KT...BECOMING S TO SW 5 TO 15 KT
LATE. SEAS 2 TO 3 FT.

GEORGES BANK...INCLUDING THE WATERS EAST OF CAPE COD AND WEST OF
68W-GEORGES BANK...EAST OF 68W TO THE HAGUE LINE-

.TODAY...W TO SW WINDS LESS THAN 10 KT...BECOMING S TO SW IN THE
AFTERNOON. SEAS 2 TO 3 FT.
.TONIGHT...S TO SW WINDS 10 TO 15 KT. SEAS 3 TO 4 FT.
.TUE...S TO SW WINDS 10 TO 20 KT...BECOMING W TO SW IN THE
AFTERNOON. SEAS 3 TO 5 FT. TSTMS AND AREAS OF FOG WITH VSBY 1 NM
OR LESS.
.TUE NIGHT...W TO SW WINDS 10 TO 20 KT...DIMINISHING TO 5 TO
15 KT AFTER MIDNIGHT. SEAS 3 TO 5 FT. TSTMS.
.WED...W TO NW WINDS 5 TO 15 KT...BECOMING N TO NW LATE. SEAS
3 TO 5 FT.
.THU...W TO NW WINDS LESS THAN 10 KT...BECOMING W TO SW LATE.
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SEAS 2 TO 4 FT.
.FRI...SW WINDS LESS THAN 10 KT...BECOMING E 10 TO 20 KT LATE.
SEAS 2 TO 3 FT...BUILDING TO 3 TO 5 FT LATE.

SOUTH OF NEW ENGLAND...FROM THE GREAT SOUTH CHANNEL TO MONTAUK,
NY INCLUDING THE WATERS SOUTH OF MARTHA'S VINEYARD AND NANTUCKET
ISLAND...OUT TO 1000 FM-
SOUTH OF LONG ISLAND...FROM MONTAUK, NY TO SANDY HOOK, NJ...OUT
TO 1000 FM-

.TODAY...W TO SW WINDS LESS THAN 10 KT...BECOMING S TO SW IN THE
MORNING...THEN...INCREASING TO 5 TO 15 KT IN THE AFTERNOON. SEAS
2 TO 3 FT.
.TONIGHT...S TO SW WINDS 5 TO 15 KT. SEAS 2 TO 3 FT.
.TUE...W TO SW WINDS 5 TO 15 KT...BECOMING S IN THE AFTERNOON.
SEAS 2 TO 4 FT. TSTMS AND RAIN.
.TUE NIGHT...S TO SW WINDS 5 TO 15 KT...BECOMING W TO NW AFTER
MIDNIGHT. SEAS 2 TO 3 FT.
.WED...N TO NW WINDS 5 TO 15 KT. SEAS 3 TO 5 FT.
.THU...NE WINDS LESS THAN 10 KT...BECOMING S TO SE LATE. SEAS
2 TO 4 FT.
.FRI...E TO NE WINDS LESS THAN 10 KT...INCREASING TO 10 TO 20 KT
LATE. SEAS 2 TO 3 FT...BUILDING TO 3 TO 5 FT LATE.

Appendix E. Example output of script which utilizes zone combining in the Pacific offshore waters (OFFPZ5) forecast to produce the VOBRA.

```
FZPN35 KWBC 120730
OFFN35

MARINE WEATHER HF VOICE BROADCAST
NWS OCEAN PREDICTION CENTER WASHINGTON DC
330 AM PDT MON AUG 12 2013

MARINE WEATHER HF VOICE BROADCAST FOR THE CALIFORNIA WATERS-
INNER WATERS FROM  60 NM TO 150 NM OFFSHORE.
OUTER WATERS FROM 150 NM TO 250 NM OFFSHORE.

SEAS GIVEN AS SIGNIFICANT WAVE HEIGHT...WHICH IS THE AVERAGE
HEIGHT OF THE HIGHEST 1/3 OF THE WAVES. INDIVIDUAL WAVES MAY BE
MORE THAN TWICE THE SIGNIFICANT WAVE HEIGHT.

SYNOPSIS FOR WASHINGTON AND OREGON WATERS

.SYNOPSIS...HIGH PRES ACROSS THE WATERS WILL GRADUALLY WEAKEN
TODAY INTO TONIGHT. LOW PRES AND A COLD FRONT WILL APPROACH THE
REGION TUE AND TUE NIGHT. THE LOW WILL PASS JUST NW OF THE
WATERS WED AND THU...AS THE COLD FRONT DRIFTS E ACROSS THE AREA
AND DISSIPATES. A WEAKENING LOW WILL MOVE NE ACROSS THE NRN
WATERS FRI.

CAPE FLATTERY TO CAPE SHOALWATER BETWEEN 60 NM AND 150 NM OFFSHORE-
CAPE SHOALWATER TO CAPE LOOKOUT BETWEEN 60 NM AND 150 NM OFFSHORE-
CAPE FLATTERY TO CAPE SHOALWATER BETWEEN 150 NM AND 250 NM OFFSHORE-
CAPE SHOALWATER TO CAPE LOOKOUT BETWEEN 150 NM AND 250 NM OFFSHORE-

.TODAY...W TO NW WINDS LESS THAN 5 KT...BECOMING LESS THAN 10 KT
IN THE MORNING...THEN...BECOMING S IN THE AFTERNOON. SEAS 3 TO
4 FT.
.TONIGHT...S WINDS 5 TO 15 KT...BECOMING S TO SE 10 TO 20 KT
AFTER MIDNIGHT. SEAS 3 TO 5 FT.
.TUE...S TO SE WINDS 10 TO 20 KT. SEAS 4 TO 7 FT. CHANCE OF RAIN.
.TUE NIGHT...S TO SE WINDS 10 TO 20 KT. SEAS 4 TO 7 FT. CHANCE OF
RAIN. CHANCE OF TSTMS AFTER MIDNIGHT.
.WED...S TO SW WINDS 10 TO 20 KT...DIMINISHING TO 5 TO 15 KT
LATE. SEAS 3 TO 6 FT.
.THU...S TO SE WINDS LESS THAN 10 KT...INCREASING TO 10 TO 20 KT
LATE. SEAS 3 TO 5 FT.
.FRI...S TO SW WINDS 5 TO 15 KT. SEAS 3 TO 6 FT.

CAPE LOOKOUT TO FLORENCE OR BETWEEN 60 NM AND 150 NM OFFSHORE-
FLORENCE OR TO POINT ST. GEORGE BETWEEN 60 NM AND 150 NM OFFSHORE-
CAPE LOOKOUT TO FLORENCE OR BETWEEN 150 NM AND 250 NM OFFSHORE-
FLORENCE OR TO POINT ST. GEORGE BETWEEN 150 NM AND 250 NM OFFSHORE-

.TODAY...N TO NW WINDS 5 TO 15 KT...BECOMING S. SEAS 3 TO 4 FT.
.TONIGHT...S WINDS 5 TO 15 KT. SEAS 3 TO 5 FT.
.TUE...S WINDS 10 TO 20 KT. SEAS 3 TO 6 FT.
.TUE NIGHT...S WINDS 10 TO 20 KT...BECOMING S TO SW 5 TO 15 KT
AFTER MIDNIGHT. SEAS 3 TO 6 FT.
.WED...S WINDS 5 TO 15 KT...BECOMING S TO SW LATE. SEAS 3 TO
5 FT.
.THU...S TO SE WINDS LESS THAN 10 KT...BECOMING S TO SW LATE.
SEAS 3 TO 5 FT.
.FRI...S TO SW WINDS 5 TO 15 KT...BECOMING W TO SW LATE. SEAS
3 TO 6 FT.
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